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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/563,462

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Teruo Ishishita

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EXAMINER

RAMADAN, RAMY O

ART UNIT

PAPER NUMBER

2838

MAIL DATE

DELIVERY MODE

05/30/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/563,462	<b>Applicant(s)</b> ISHISHITA, TERUO	
	<b>Examiner</b> RAMY RAMADAN	<b>Art Unit</b> 2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 22-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22-25, 30-33, 38 and 39 is/are rejected.
- 7) ☒ Claim(s) 26-29 and 34-37 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 January 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### **Amendments**

1. Acknowledgement is made of the amendment filed January 24, 2008.

### **Drawings**

2. The drawings were received on January 24, 2008. These drawings are accepted.

### ***Response to Arguments***

3. Applicant's arguments filed January 24, 2008 have been fully considered but they are not persuasive.

In response to applicant's argument regarding claims 22, 30, 38 and 39 that:

"However, in contrast to certain embodiments of the present invention, Kikuchi does not- disclose or suggest a state of charge value adoption means for adopting the apparent state-of- charge value if the capacity difference is at least a predetermined capacity difference that is stored beforehand."

The examiner respectfully disagrees and submits that Kikuchi discloses that the battery ECU (68) sets (adopts) the new SOC (N-SOC) value if the movable range ( $\Delta AHR$ ) is at least a predetermined movable range (5.2AH-1.3AH) (predetermined capacity difference stored before hand) (Para [0062]-[0066]).

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**5. Claims 22-25, 30-33 and 38-39 are rejected under 35 U.S.C. 102(b) as being anticipated by KIKUCHI et al. (EP 909001 A2), hereinafter Kikuchi.**

As per claims 22-23 and 30-31, Kikuchi discloses and shows in Fig. 7, a battery assembly charge and discharge control device for controlling the amount of charge and discharge of a battery assembly (50) that is formed by combining a plurality of battery blocks (74) (unit batteries) of a rechargeable (secondary) battery type (Page 8, Para [0053]), comprising:

a voltage sensor (76) (remaining capacity detector) that detects voltages corresponding to the state of charge or SOC (remaining capacities) of the battery blocks (Abstract and Page 8, Para [0053]); and

a battery ECU (68) (controller) that controls (restricts) the amount of charge and discharge based on a SOC upper limit value (80%) (a capacity upper limit value) and a SOC lower limit value (20%) (capacity lower limit value) of the battery blocks (74) (Page 4, Para [0028], Page 5, Para [0031] and Page 8, Para [0052]-[0053]), detects (computes) an integrated SOC or charged amount (RAHR) (a control state-of-charge value) based on a minimum value (1.3AH) of the detected charged amount as a reference value (Page 9, Para [0062]-[0065] and Fig. 9), computes as a movable range ( $\Delta$ AHR) (capacity difference), a charged mount (remaining capacity) difference between the charged amount of a first battery block (74) with the most charged amount (maximum remaining capacity) and the charged amount of a second battery block (74) with the least charged amount (Page 4, Para [0022], Page 6, Para [0044], Page 8, Para

[0057]-[0058], Page 9, Para [0059] and Figs. 7 and 9), stores an expression (2) that represents a correlation between the movable range ( $\Delta AHR$ ) and a new SOC (N-SOC) (an apparent state-of-charge value) that is different from (RAHR) value, computes the new SOC (N-SOC) with reference to the expression (2) based on a variation (DAHR) which is based on the movable range ( $\Delta AHR$ ), and the battery ECU (68) sets (adopts) the new SOC (N-SOC) value if the movable range ( $\Delta AHR$ ) is at least a predetermined actual movable range (Page 5, Para [0022]-[0025], Page 9, Para [0062]-[0066], Page 10, Para [0071]-[0075] and Figs. 10A-11F).

As per claims 38-39, the method and the program merely recites the steps of using the elements of the device as disclosed above and since each element must be present to perform the steps, the method as claimed would be inherent in view of the device as disclosed by Kikuchi.

As per claims 24 and 32, Kikuchi discloses that the ECU (68) sets (adopts) the lower limit value of the battery block (74) with the least charged amount (minimum remaining capacity of the unit batteries), as an integrated SOC or charged amount (RAHR) for controlling the battery assembly (50), if the movable range ( $\Delta AHR$ ) is less than a pre-stored predetermined range (the range between 1.3AH and 5.2AH) (Page 9, Para [0062]-[0065]).

As per claims 25 and 33, Kikuchi teaches that the movable range ( $\Delta AHR$ ) is affected by a variation (DAHR) in the charged amount, therefore it would be implicit that in the absence of a variation (DAHR), the movable range ( $\Delta AHR$ ) would be at least a pre-stored predetermined maximum value (5.2AH-1.3AH), and the predetermined

maximum value (5.2AH-1.3AH) would be considered by the ECU (68) (Page 9, Para [0062]-[0065] and Figs. 10A and 11A).

***Allowable Subject Matter***

6. Claims 26-29 and 34-37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:

As per claims 26 and 34 primarily, the prior art of record, taken alone or in combination thereof, does not disclose or suggest in the claimed combination:

the correlation being expressed by the following mathematical Expression:

$$\text{SOC} = (\text{SOCmid} - \text{SOClow}) / (\text{Qhigh} - \text{Qlow} - \text{Qd}) \times (\text{Qmin} - \text{Qlow}) + \text{SOClow}$$

where SOC is the apparent state-of-charge value, and SOCmid is a control center value of the state-of-charge value, and SOClow is a lower limit set value of the state-of-charge value, and SOChigh is an upper limit set value of the state-of-charge value, and Qlow is a capacity value converted from SOClow, and Qhigh is a capacity value converted from SOChigh, and Qd is the capacity difference, and Qmin is the minimum remaining capacity.

***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAMY RAMADAN whose telephone number is (571) 272-9761. The examiner can normally be reached on Mon-Fri 7:30 am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Akm Ullah can be reached on (571) 272-2361. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

5/12/2008

/Gary L. Laxton/  
Primary Examiner  
Art Unit 2838

/RR/